

Emotional intelligence and teacher self efficacy: The contribution of teacher status and length of experience

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Practicing teachers and principals in selected Government schools in Victoria provided data on their levels of emotional intelligence and teacher efficacy beliefs. The data supported the theoretical expectation of a linkage between emotional intelligence and teacher self efficacy. Regression analyses showed that neither gender nor age moderated this relationship. However length of teaching experience and current status add significant direct effects on predicting teacher self efficacy but did not moderate the relationship between emotional intelligence and teacher self efficacy. These findings are significant as this now demonstrates a relationship between levels of emotional intelligence in teachers, their self efficacy beliefs and teacher effectiveness.

Introduction

It is clear from recent research that teachers have great potential to effect students' educational outcomes (Anderson, 2004). There is substantial evidence indicating that schools make a difference in terms of student achievement, and the significant factor in that difference is attributable to teachers. Specifically, differential teacher effectiveness is a strong determinant of differences in student learning (Darling-Hammond 2000). Studies of teacher-effectiveness indicate that student engagement in learning is to be valued above curriculum plans and materials. Research on teacher effectiveness has yielded a wealth of understanding about effective teacher characteristics (Hughes, Abbott-Campbell & Williamson, 2001) and the effects these characteristics have on student learning. Effective teachers believe that they can make a difference in student learning outcomes and they teach in a way that demonstrates that belief (Gibbs, 2002). Teacher effectiveness is governed by levels of self efficacy, that is, the belief teachers have about their teaching capabilities (Gibbs, 2002; Tschannen-Moran, Woolfolk-Hoy & Hoy, 1998).

Departments of education acknowledge this link between teacher effectiveness and teacher self efficacy. In Victoria, the Department of Education and Training (2005a) states that "improving teacher efficacy has four times the [impact] on student outcomes than improving school

effectiveness". Dembo and Gibson (1985) assert that because of this connection, "the problem of identifying antecedents of efficacy and developing ways to enhance teachers' sense of efficacy is critical" (p.177). Sutton and Wheatley (2003) suggest that "the substantial variation in teacher efficacy may result in part from variance in teachers' emotions" (p.339). Thus research needs to explore the relationship between teacher emotions and efficacy beliefs (Emmer & Hickman, 1991).

This paper reports on a study that examines the relationship between emotional intelligence and teacher self efficacy among primary and secondary school teachers. The moderating effects of gender, age, years of experience and current teaching status on the association between emotional intelligence and teacher self efficacy are also reported.

Teacher self efficacy

Research in the area of teacher self efficacy has grown out of Bandura's (1997) social cognitive theory. Bandura (1994) asserts that perceived self efficacy can be explained as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives", and that these beliefs "determine how people feel, think, motivate themselves and behave". People with a strong sense of efficacy set themselves more challenging goals and maintain stronger commitment to those goals than do people with a poorer sense of efficacy (Bandura, 1994; 1995).

Self efficacy, when applied to teachers, refers to the extent to which teachers believe they can bring about change and impact on student behaviour and learning outcomes (Gibson & Dembo, 1984). Teachers who have "a high sense of efficacy about their teaching capabilities can motivate their students and enhance their [students'] cognitive development" (Bandura, 1994, para 56). "The task of creating environments conducive to learning rests heavily on the talents and self efficacy of teachers" (Bandura, 1995, p.19).

Studies reported by Tschannen-Moran, et al, (1998) repeatedly demonstrate the importance of teacher self efficacy and its association with a wide range of teaching and learning outcomes. These outcomes include teachers' classroom behaviours, effort and goal-setting, their openness to new ideas and willingness to try new methods, planning and organisational competence, persistence, resilience, commitment and enthusiasm for teaching and longevity in their chosen career. In addition, teacher self efficacy has been shown to influence student achievement, attitude and emotional growth and is related to the health of the organisation, atmosphere in the school, classroom based decision-making and to student self efficacy.

Measuring teacher self- efficacy

Bandura's definition of efficacy referred to a person's belief in their ability to perform a specific action. "The adequacy of self efficacy measures can be evaluated by their level of specificity and the range of task demands they include" (Bandura, 1997, p.45). The original Gibson and Dembo (1984) Teacher Efficacy Scale (TES) was designed for a specific occupation and with tasks unique to teaching. It has been modified for use in examining specific aspects of teacher efficacy such as science teaching (Enochs, Scharmann & Riggs, 1995) and special education (Podell & Soodak, 1993; Tsui, 1995) and also for classroom management (Tschannen-Moran et al, 1998). While the Teacher Efficacy Scale has received a great deal of attention and even some criticism (Woolfolk & Hoy, 1990; Saklofske, Michayluk & Randhawa, 1988; Guskey & Passaro, 1994), it has also enjoyed widespread use for measuring teacher efficacy (Fives, 2003).

Findings regarding teacher self efficacy

Research has shown that teacher self efficacy is one of the most important variables consistently related to positive teaching and student learning outcomes (Gibson & Dembo, 1984; Ashton & Webb, 1986; Enoch et al, 1995; Woolfolk & Hoy, 1990; Henson, Kogan & Vacha-Haase 2001; Podell & Soodak, 1993; Tschannen-Moran et al, 1998).

Gibson and Dembo (1984) found that teachers with high efficacy were better able to keep students engaged in learning activities and "spent more time monitoring and checking seat-work" whereas teachers with low efficacy demonstrated a lack of persistence and gave negative feedback to students (p.576). Studies of pre-service (student) teachers consistently demonstrate that those higher in self efficacy are more humanistic in their approach to their students (Woolfolk & Hoy, 1990), have higher quality lesson presentation and questioning skills, and more effective classroom management techniques (Emmer & Hickman, 1991; Saklofske, et al, 1988).

Gender, age, experience, status and efficacy

Bandura (1994) postulated that age would not correlate with efficacy because "there are many pathways through life and, at any given period, people vary substantially in how efficaciously they manage their lives". However, Coladarci and Breton's (1997) study found a weak, but significant positive correlation between age and personal teaching efficacy using the TES. Four years earlier, a study by Hoy and Woolfolk (1993), using a shortened version of the TES, yielded weak correlations between personal teacher self efficacy and years of teaching experience.

In contrast, a study using the Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk-Hoy, 2002) yielded no significant differences for age or gender as expected. However, the same study revealed significant differences between experienced and novice teachers. On the basis of their own research, Imants and De Brabander (1996) using a modified version of the TES, concluded that several factors influence and impact on teacher self efficacy. These include position in the school hierarchy, gender and years of experience.

Experience may be a key ingredient in teacher's sense of efficacy. Tsui (1995), using a modified version of the TES, found that "years of teaching experience in a teaching setting is an overriding factor in moulding one's feelings of teaching efficacy" (p.372). Given that Bandura (1997) describes mastery and vicarious experiences as major sources of efficacy beliefs, this finding is not surprising.

Relationship between teacher self efficacy and emotional intelligence

Sutton and Wheatley (2003) suggest that "the substantial variation in teacher efficacy may result in part from variance in teachers' emotions" (p.339). Chan (2004) found that "self efficacy beliefs were significantly predicted by the components of emotional intelligence" (p.15) and suggested that differences between teachers might affect this relationship.

Previous research, although limited, has focused on "emotions as a consequence rather than an antecedent" of efficacy beliefs (Sutton & Wheatley, 2003, p.339). Emmer and Hickman (1991) recommend research to explore the relationship between teacher emotions and efficacy beliefs. "Efficacy beliefs are the product of cognitive processing of diverse sources of information" (Bandura, 1997, p.115) which, Bandura names as Somatic and Emotional states, and is "somatic information conveyed by physiological and emotional states", that is, referring to a person's own perception of their emotional and psychological position (Bandura, 1997, p.106). The extent to which teachers are able to deal effectively with their own and others' emotions can be considered a reflection of their own emotional intelligence (Atkins & Stough, 2005).

Emotional intelligence

The term emotional intelligence (EI) was popularised by Goleman (1995) who claimed that emotional intelligence "can be as powerful, and at times more powerful, than I.Q." (p.34). Emotional intelligence was first referred to in academic literature in 1990 and defined as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p.189). That year an empirical study demonstrated that "aspects of

emotional intelligence appear to be abilities, in the traditional sense, that can be measured" (Mayer, DiPaolo & Salovey, 1990, p.779).

Mayer, Salovey, Caruso & Sitarenios (2001) later refined their definition to state that emotional intelligence is "an ability to recognise the meanings of emotions and their relationships, and to reason and problem-solve on the basis of them" (p.234). This definition of the concept differs from that used by some others (eg, Bar-On, 1997; Goleman, 1995, 1998; Schutte, Malouff, Hall, Haggerty, Cooper, Golden & Dornheim, 1998). Fortunately, while definitions vary, "they nevertheless tend to be complementary rather than contradictory" (Ciarrochi, Chan & Caputi, 2000, p.540).

Measures of emotional intelligence

Many of the current measures of emotional intelligence, both ability (eg, Mayer Salovey Caruso Emotional Intelligence Test [MSCEIT]) and self-report (eg, Schutte Self-Report Inventory [SSRI]), owe their development to the theoretical framework proposed by Salovey & Mayer (1990). Mayer and Salovey revised their model in 1997, detailing a four-branch model of emotional intelligence: 'managing', 'understanding', 'using' and 'identifying' emotions (Brackett & Mayer, 2003). It is based on the authors' deepening commitment to understanding emotional intelligence as an ability (Austin, Saklofske, Huang & McKenney, 2004) and is described as being both hierarchical and developmental (Mayer & Salovey, 1997). Each of the four branches is conceived as representing related emotional intelligence abilities, that is, the ability to a) identify emotions, b) use emotions to facilitate thought, c) understand emotions, and d) manage emotions to promote personal growth (Mayer & Salovey, 1997).

An ability model of emotional intelligence suggests emotional intelligence skills can be taught and that individuals can learn and improve their competence in each of the four branches of emotional intelligence. For example, a teacher who is low on the second branch of emotional intelligence, 'using emotions', may be assisted to learn the skills required for "harnessing different emotions to encourage different approaches to problem solving" (Perry, Ball & Stacey, 2004, p.33).

The four-branch model of emotional intelligence is the basis for the development of the Reactions to Teaching Situations measure (RTS) (Perry et al, 2004; Perry & Ball, 2005). The RTS, was developed by Perry et al, (2004) for use with teachers. The RTS provides ten vignettes of typical teaching situations and asks a respondent how likely they are to respond in one of four ways, each corresponding to one of the four branches of emotional intelligence identified by Mayer and colleagues (Mayer & Salovey, 1997; Mayer et al, 2001).

Findings regarding emotional intelligence

While research into the construct of emotional intelligence is in its infancy, studies to date have shown that emotional intelligence does "explain variance in real-life criteria even after numerous other well-established measures are controlled for" (Ciarrochi et al, 2000, p.557).

Studies have demonstrated that people who report higher levels of emotional intelligence also report higher levels of attending to health and appearance and more positive interactions with friends and family (Brackett & Mayer, 2003). Similarly, Schutte, Malouff, Bobik, Coston, Greeson, Jedlicka, Rhodes and Wendorf (2001) found a significant positive correlation between social skills and emotional intelligence and that participants with higher levels of emotional intelligence reported significantly greater marital satisfaction than did those with lower levels. Teachers have rated school children with higher emotional intelligence as less aggressive and more pro-social than their peers and customer service personnel with higher emotional intelligence were rated as more effective by their managers than those with lower levels of emotional intelligence (Brackett & Mayer, 2003). Abraham (2000) found that more emotionally intelligent employees had higher levels of job satisfaction and greater commitment to their organisations.

Similarly, Gardner and Stough (2002) found significantly positive relationships between transformational leadership and emotional intelligence, a significant negative correlation between emotional intelligence and *laissez-faire* leadership but no significant relationship between emotional intelligence and transactional leadership. This study (Gardner & Stough, 2002) provides some empirical evidence to support the contention that a leader's emotional intelligence affects others in an organisation and impacts on results (Goleman, Boyzatis & McKee, 2001). Using the Swinburne University Emotional Intelligence Test (SUEIT), a self-report measure designed for the workplace, Gardner & Stough (2002) surmised that "leaders identified as having high levels of EI are more likely to desire success, work harder, lead an effective team and be more satisfied working with others. It could be inferred that individuals with particularly low levels of EI ... would not make effective leaders" (pp.75-76).

Gender, age, experience, status and emotional intelligence

Schutte et al, (1998) and Van Rooy, Alonso and Viswesvaran (2005) found that females have significantly higher reported emotional intelligence than do males. A similar result was found by Atkins and Stough (2005). However, Petrides & Furnham (2000) found that males 'overall' and 'self motivation' estimates of emotional intelligence were significantly higher than were females' estimates. These authors suggested males score higher

on self-estimates of emotional intelligence than do females because females may tend towards self-derogation on self-report measures.

In contrast, a study of pre-service (student) teachers using the RTS, by Perry et al, (2004) found that females reported significantly higher emotional intelligence than did males. Other studies show remarkably similar results. (Ciarrochi et al, 2000; Day & Carroll, 2004). Women scored significantly higher than did men on overall emotional intelligence. Interestingly, the sample populations in these studies are fairly typical of many of the studies undertaken in emotional intelligence research, ie, university students, more women in the sample than men and the majority being in their early twenties. As a result it is not known whether the results would generalise to other populations. Many researchers and authors recommend that further studies explore the relationship between gender and emotional intelligence (Barchard & Hakstian, 2004; Perry et al, 2004; Schaie, 2001; Van Rooy et al, 2005).

To be deemed an intelligence, emotional intelligence should increase with age and experience as is the case with other cognitive abilities (Mayer et al, 1999) or at least vary with age (Schaie, 2001). In a paper by Atkins and Stough (2005) the relationship between age and emotional intelligence was explored with studies using the MSCEIT and the SUEIT. Only the SUEIT subscale 'Emotions direct cognitions' was significantly and positively correlated with age, especially for women executives. All other correlations between emotional intelligence and age were small but in the direction expected. In contrast, there were no significant age effects for overall emotional intelligence or any of the four branches of emotional intelligence when measured by the MSCEIT. Similar results have been found in other studies (Day & Carroll, 2004; Perry et al, 2004). However, results in these studies may have been affected by restriction of range for age and experience which may make it difficult to detect relationships with emotional intelligence (Schaie, 2001).

The main evidence for a positive correlation between emotional intelligence and age is presented in the manuals for the MSCEIT (Mayer, Salovey & Caruso, 2002) and EQ-i:S (Bar-On, 1997). Even so, effect sizes for age appear to be very small (Atkins & Stough, 2005). Results from an Australian study provide some support for a weak significant correlation between age and emotional intelligence (Palmer, Manocha Gignac & Stough, 2003).

When there has been a relationship between age and emotional intelligence, it has been weak and the same can be said for the relationship between experience and emotional intelligence. Day and Carroll (2004) found that years of experience (studying in university) correlated positively but weakly

with overall emotional intelligence and with three of four subscales of the MSCEIT.

Emotional intelligence might be higher in executive populations than it is among those working in more general roles in organisations (Palmer, Gardner & Stough, 2003), which supports previous assertions that emotional intelligence might be associated with higher occupational status and success (Goleman, 1995; 1998).

The relationship between age, length of experience, current status and emotional intelligence remains unclear and further research is warranted.

The study

The current research aimed to investigate, in a sample of Australian teachers, the relationship between emotional intelligence and teacher self efficacy and the extent to which this relationship is moderated by gender, age, teaching experience, and status.

It was hypothesised that

- a) teachers who reported higher levels of emotional intelligence would also report higher levels of self efficacy, and
- b) the relationship between emotional intelligence and self efficacy would be moderated by gender, age, length of teaching experience and current status within the school.

Procedure

Participants were recruited after appropriate ethical clearances were given by Monash University's Standing Committee on Ethics in Research Involving Humans, the Victorian Department of Education and Training Committee for Research in Schools, and, the administration of the schools at which the teachers worked. Eleven government schools from the Gippsland Region (7 primary schools and 4 secondary colleges) were selected for convenience and a sample of teachers was recruited from within these schools. The first author briefly outlined the project during routine staff meetings in each school and those teachers who volunteered to participate were each supplied with a questionnaire booklet, reply paid addressed envelope and an explanatory statement. Participants were requested to complete the questionnaire anonymously. A total of 300 questionnaires were distributed with 211 (70%) being completed and returned. Data were collated and entered onto an SPSS data file for analyses. No data identifying individual teachers or their schools were coded.

Participants

Of the 211 participants there were 135 female (64%) and 75 male (35.5%). One participant did not specify gender (0.5%).

Their ages ranged between 22 and 63 years, the mean age was 45.60 years ($SD = 9.30$), the mode was 51 years and the median age was 48 years.

The number of years of teaching experience for participants ranged from 1 to 43 years. The mean length was 19.71 years ($SD=10.19$) and the mode was 30 years and the median length was 21 years.

The classifications for teachers and principals used by the Victorian Department of Education and Training were used to define the categories of current status level. There are five levels from highest status to lowest status. The proportions in the sample were: Principal (8.1%), Leading Teacher (14.7%), Expert Teacher (51.2%), Accomplished Teacher (14.7%) and, Graduate Teacher (10.4%). Information about the variation of skills and responsibilities within these classifications for teachers in Victoria is available (<http://www.eduweb.vic.gov.au/hrweb/careers/default.htm>).

Measures

The questionnaire booklet consisted of two scales: The Reactions to Teaching Situations (RTS) (Perry et al, 2004) to measure the construct of emotional intelligence, and, The Teaching Efficacy Scale (TES) (Gibson & Dembo, 1984) to measure personal teaching efficacy.

The RTS (Perry et al, 2004) was chosen on the basis of its face validity for use with teachers, its demonstrated internal consistency (alpha reliability 0.82; Perry et al, 2004) and its construct validity as a measure of emotional intelligence (convergent and discriminant validity; Perry & Ball, 2005). The RTS consists of ten descriptions of school-based situations that teachers might typically encounter. For each situation there are four possible reaction responses that include one for each of the four branches of emotional intelligence. Participants are asked to consider the likelihood of their immediately feeling and thinking in a particular way. Likelihood is measured on a 5-point Likert scale ranging from 1 = 'never likely' to 5 = 'always likely'.

The TES (Gibson & Dembo, 1984) was designed to measure the construct of teacher self efficacy. The full scale consists of 30 statements. Respondents are required to indicate their level of agreement towards each statement using a 6-point Likert scale where 1 = 'Strongly Disagree' and 6 = 'Strongly Agree'. Twelve items are negatively worded and require reverse scoring before analysis to enable composite scores to be created. However, the

measure is factorially complex. Analyses consistently reveal two relatively independent factors most often referred to as 'Personal Teaching Efficacy' and 'General Teaching Efficacy' (Gibson & Dembo, 1984; Saklofske et al, 1988; Woolfolk & Hoy, 1990).

For this study, an exploratory factor analysis (using principal components) of the TES items was undertaken, as recommended by previous researchers eg, Woolfolk & Hoy (1990), to identify the clearest loading items to measure personal teaching efficacy. The 17 items which loaded >0.30 on the first rotated factor (labelled as the Personal Teaching Efficacy Factor) were used as the measure of teacher self efficacy, and this group of items is consistent with findings of previous studies (Gibson & Dembo, 1984; Guskey & Passaro, 1994; Saklofske, et al, 1988; Woolfolk & Hoy, 1990).

The 17 items of the Personal Teaching Efficacy Factor reflect Bandura's construct of efficacy. The measure was chosen for this study on the basis of its relevance to a wide range of teachers, the adequate reliability for the items comprising the Personal Teaching Efficacy measure (0.84 for this study), and on the basis of credible links made in the literature between personal teaching efficacy and teacher effectiveness

Results

Preliminary data analysis was conducted followed by comparison of means for independent groups and examination of bivariate associations among continuous variables. The first hypothesis was addressed by exploring the correlation between emotional intelligence and personal teaching efficacy. The roles of gender, age, length of teaching experience, and current status in the relationship between emotional intelligence and personal teaching efficacy were examined by a series of regression analyses.

Preliminary analysis

The data sets were screened for errors. Missing data were not replaced, in accordance with the recommendations of Tabachnick and Fidell (2001) as less than 5% of any scale data was missing and the data set is considered large ($n=211$). To investigate normality, descriptive statistics were explored. Alpha was set at .05 and an examination of histograms, scatter-plots, and kurtosis and skewness statistics revealed no serious violations of normality.

The sample size exceeded the minimum requirement for regression analyses (Tabachnik & Fidell, 2001). An assumption of multicollinearity among independent variables was not violated according to a check of Tolerance statistics. No outliers were found when checking Mahalanobis distance against the critical Chi-square (Pallant, 2001). Inspection of

residuals scatter plots and normal probability plots revealed no major violations of the assumptions of normality, linearity, independence of residuals or homoscedasticity. It was not necessary to transform variables. The highest score for emotional intelligence was 170 out of a possible score of 200. For personal teaching efficacy, the highest score was 99 out of a possible 102.

In order to compare the emotional intelligence and personal teaching efficacy scores for males and females two independent samples t-tests were conducted. There was a significant difference in emotional intelligence scores for males ($M=138.19$, $SD=14.83$) and females [$M=144.48$, $SD=12.33$; $t(199)=-3.22$, $p=.001$]. The magnitude of the differences in the means was moderate ($\eta^2 = .05$). However, there was no significant difference in personal teaching efficacy scores for males ($M=70.34$, $SD=9.90$), and females [$M=72.33$, $SD=10.08$; $t(207)=-1.38$, $p=.17$]. The magnitude of the differences in the means was very small ($\eta^2 = .01$).

The association between age and emotional intelligence was $r=.17$ ($p<.05$), age and teacher self efficacy $r=.13$ (ns).

Hypotheses testing

Emotional intelligence and personal teaching efficacy

There was a significant moderate positive relationship ($r = .38$, $p<.01$) between emotional intelligence and personal teaching efficacy. The coefficient of determination R^2 was 0.14, which indicates that about 14% of the variation in personal teaching efficacy can be explained by taking emotional intelligence into account. The size of this correlation indicates that generally high levels of emotional intelligence are related to high levels of personal teacher efficacy.

Moderation

Baron and Kenny (1986) suggested that regression analyses be used to examine moderating effects between continuous variables. Four standard multiple regression analyses (one for each of the hypothesised moderator variables) were conducted. In each, the predictor (emotional intelligence) and moderator (either gender, age, length of teaching experience, and status) variables were centred before conducting the analyses to reduce the potential for multicollinearity between the interaction terms and components (Aiken & West, 1991). Centred scores were created for each participant by subtracting the mean of the scale from the individual's score. To represent the interaction between predictor and moderator, the centred variables were multiplied together.

With personal teaching efficacy as the dependent variable, emotional intelligence, the centred moderator (eg, gender) and the interaction term as described above, were entered into the analysis. Evidence of a moderator effect is present when the interaction term (interaction between centred predictor and moderator variables) is found to be related ($p < .05$) to the dependent variable beyond the main effects of the predictor and moderator variables (Baron & Kenny, 1986). Hence the moderator (eg, gender) is said to influence the relationship between emotional intelligence and personal teaching efficacy. Interactions found to be significant would be subjected to *post-hoc* analyses in order to identify the conditions under which the moderator affects the relationship between the predictor and the dependent variable (Aiken & West, 1991).

Evidence of moderation of the association between emotional intelligence and personal teaching efficacy

Results of the four regression analyses used to examine possible moderation effects are presented in Table 1.

Table 1: Summary of standard regression analyses for centred variables predicted as possible moderators of relationship between emotional intelligence and personal teaching efficacy

Variable	Direct effects	Moderation	Unique contribution
(a) gender	emotional intelligence $t=5.80^{***}$	not found	$\beta = .40$
(b) age	emotional intelligence $t=5.99^{***}$	not found	$\beta = .40$
(c) experience	emotional intelligence $t=5.62^{***}$ experience $t = 2.73^{**}$	not found	$\beta = .37$ $\beta = .18$ $\beta = .34$
(d) status	emotional intelligence $t = 5.24^{***}$ status $t = 3.60^{***}$	not found	$\beta = .24$

$^{**}p < .01$, $^{***}p < .001$

The results depicted in Table 1 do not support any interaction between each of the possible moderators (gender, age, length of teaching experience, current status) in the prediction of personal teaching efficacy. In each of the four regressions there was no significant moderation effect, only evidence of some significant direct effects. In each case emotional intelligence was a highly significant predictor of personal teaching efficacy, with significant beta values (range between 0.34 and 0.40). There were also significant direct effects due to length of teaching experience (beta value 0.18), and current status (beta value of 0.24).

These results show that emotional intelligence makes a strong unique contribution to explaining personal teaching efficacy, when the effect of the four possible moderators is controlled for. Length of teaching experience and current status also make significant unique contributions. As current status was seen as making a strong unique contribution, the following analyses investigate the particular nature of this contribution.

Emotional intelligence and current status

The differences in emotional intelligence scores for the five status groups: graduate, accomplished, expert, and leading teachers and principals were examined by a one-way between-groups analysis of variance (ANOVA). A statistically significant difference for the five status groups [$F(4, 200)=3.21$, $p=.01$] was indicated by the ANOVA. Figure 1 plots the emotional intelligence means for each of the five status groups. It can be noted that the means for Leading Teachers and Principals are higher than other groups. The effect size, calculated using eta squared, was 0.06.

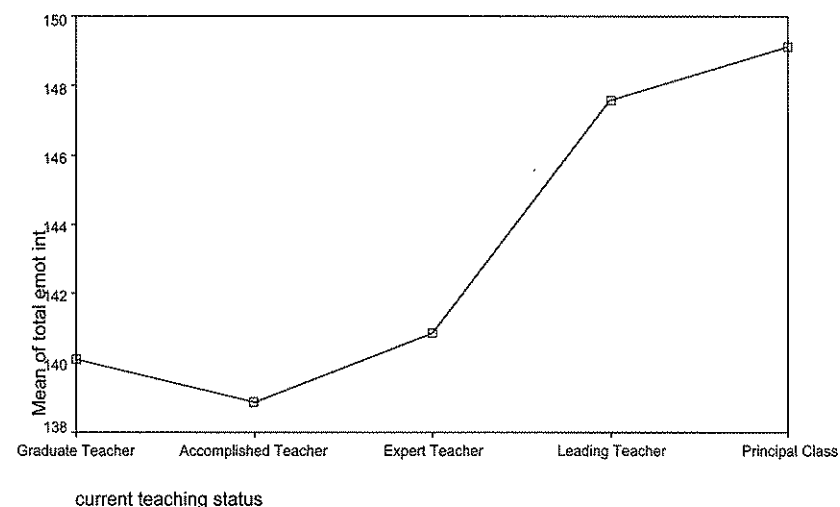


Figure 1: Plot of emotional intelligence means for the five status groups

Post-hoc comparisons using the Tukey HSD test indicated that the mean for Accomplished Teachers ($M=138.89$, $SD=14.67$) was statistically different ($p < .10$) from both Leading Teachers ($M=147.57$, $SD=12.77$) and Principals ($M=149.12$, $SD=10.95$). The means for Graduate Teachers ($M=140.09$, $SD=12.04$) and Expert Teachers ($M=140.85$, $SD=13.66$) did not differ significantly from any other status group.

Personal teaching efficacy and current status

The differences in personal teaching efficacy scores for the five status groups: graduate, accomplished, expert, and leading teachers and principals were examined by a one-way between-groups analysis of variance (ANOVA). The ANOVA indicated a statistically significant difference for the five status groups [$F(4, 204)=6.52, p=.000$]. The effect size, calculated using eta squared, was 0.11.

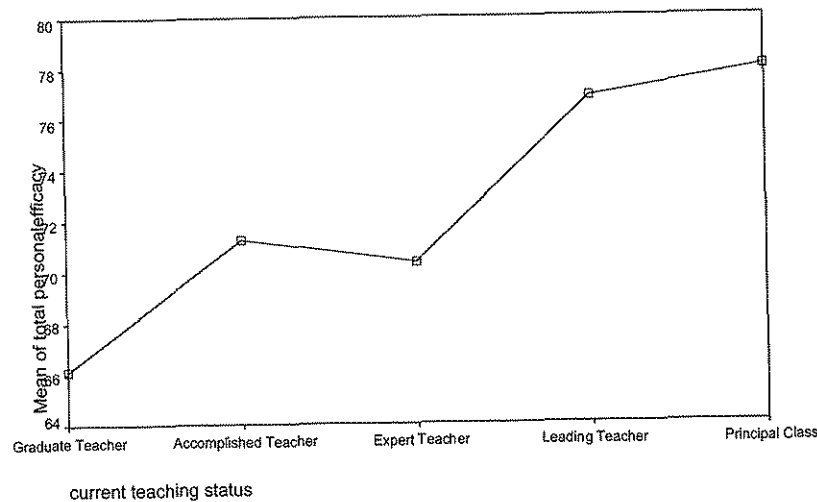


Figure 2: Plot of personal teaching efficacy means for the five status groups

Post-hoc comparisons using the Tukey HSD test indicated that the mean for Graduate Teachers ($M=66.14, SD=9.33$) was statistically different from both Leading Teachers ($M=76.84, SD=9.49$) and Principals ($M=78.00, SD=7.25$) as was the mean for Expert Teachers ($M=70.35, SD=9.80$). The mean for Leading Teachers differed significantly from that of Graduates and Expert teachers, as did the mean for Principals. The mean for Accomplished teachers ($M=71.26, SD=9.89$) did not differ significantly from any other status group.

Discussion

This study investigated the relationship between emotional intelligence and teacher self efficacy and the extent to which this relationship is moderated by gender, age, teaching experience, and status in a sample of Australian teachers. It was hypothesised that there would be a significant positive association between emotional intelligence and teacher self efficacy and

that gender, age, length of teaching experience and current status would moderate this relationship.

Results in this study provide evidence to support the first hypothesis. As expected, emotional intelligence was positively related to teacher self efficacy. The moderate association found between emotional intelligence and teacher self efficacy provides empirical support to the theorised association between these two constructs. However, the hypotheses concerning moderation of the relationship by the variables of age, length of teaching experience and current status were not supported. None of the predicted moderators had a significant impact on the relationship between emotional intelligence and teacher self efficacy. There were no significant interaction effects suggesting that none of the moderators significantly influenced the relationship. In addition, there were no significant main effects for gender or age on the relationship between emotional intelligence and teacher self efficacy. Emotional intelligence has a relationship with teacher self efficacy independent of gender and age. This suggests that regardless of gender or age, a teachers' level of emotional intelligence is related to their sense of efficacy.

On the other hand, years of teaching experience and status are related to a teacher's sense of efficacy. However, status is a stronger influence on teacher self efficacy than experience and neither status nor experience influences a teacher's sense of efficacy as strongly as their level of emotional intelligence does. Importantly, emotional intelligence was a significant predictor of efficacy even after controlling for the effects of gender, age, experience, and status. Emotional intelligence and status together explained 20% of the variance in personal teaching efficacy and of the two, emotional intelligence makes the greater contribution to the predicted model. This is an important finding. Efficacy is a strong predictor of behaviour and teacher self efficacy is strongly related to student achievement. This study has demonstrated that a teacher's level of emotional intelligence is related to their sense of efficacy, independent of their gender, age, status, and experience. This finding can be used in support of training programs, to develop the skills of all teachers in emotional intelligence.

Emotional intelligence and teacher self efficacy

Teachers in Victorian government schools are encouraged to "provide a supportive and productive learning environment", which relies very much on the teacher's emotional intelligence. Teachers are also required to teach 'essential learnings', which include personal and social learning domains involving skills associated with emotional intelligence (Department of Education & Training, 2005b).

In the current study, younger teachers, males and those in lower status positions have lower levels of emotional intelligence than do females, older teachers and those in higher status positions. It can be argued that training programs to improve emotional intelligence would make a valuable contribution, particularly to the skills of younger teachers, males, and those in lower status positions.

Consistent with theoretical and empirical research by Tschannen-Moran & Woolfolk Hoy (2002), the present investigation demonstrated that neither gender nor age is significantly related to teacher self efficacy. On the other hand, the current results demonstrated significant correlations between efficacy and experience as well as between efficacy and status, consistent with previous research (Imants & De Brabander, 1996; Tschannen-Moran & Woolfolk Hoy, 2002; Tsui, 1995).

Teachers occupying higher status positions in the hierarchy, ie, Leading Teachers and Principals, have a stronger sense of efficacy than Graduate Teachers who occupy lower status positions. This suggests an association between efficacy and current status is consistent with previous research that position in a school's hierarchy affects a teacher's sense of efficacy (Imants & De Brabander, 1996; Tschannen-Moran & Woolfolk Hoy, 2002). It is important to find ways to enhance efficacy for teachers who are less experienced and who occupy lower status positions in a school's hierarchy. This provides support for developing training programs to teach the skills associated with emotional intelligence for the purpose of enhancing teachers' sense of efficacy, particularly focussed on improving the skills of less experienced teachers and those in lower status positions,

Implications

Previously "research has demonstrated that efficacy is related to important outcomes. However, little work has looked at our ability to influence teachers' efficacy" (Fives, 2003, p.42). Current results show that those teachers with higher reported emotional intelligence also have a stronger sense of efficacy. Importantly, this relationship exists beyond the effects of gender, age, experience, or status of the teacher.

It is possible that enhancing a teacher's emotional intelligence may have a positive influence on their sense of efficacy. This in turn may lead to improved student achievement since a strong sense of efficacy is associated with important outcomes, such as student learning and teacher effectiveness. This is an argument for developing pre-service and in-service courses for teachers that focus on the skills associated with emotional intelligence.

In conclusion, results in this study were consistent with expectations that emotional intelligence is positively related to teacher self-efficacy. In addition, consistent with prediction, female teachers reported higher levels of emotional intelligence than did male teachers. Age and status were significantly related to emotional intelligence while experience and status were significantly related to personal teaching efficacy. However, none of the predicted moderators had a significant impact on the relationship between emotional intelligence and efficacy. Emotional intelligence is a significant predictor of efficacy even after controlling for the effects of gender, age, length of experience, and current status.

Assisting teachers to further develop their emotional intelligence may enhance their sense of efficacy. As teacher self efficacy is associated with student achievement, enhancing teachers' emotional intelligence appears to be a means of achieving improved student outcomes.

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